Roland

ACOUSTIC TRIGGER INTERFACE

AT-4

Owner's Manual



00127223 93'-9-A3-11K

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

ACOUSTIC TRIGGER INTERFACE AT-4

(Gerät, Typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der BMPT-AmtsblVfg 243/1991 funk-entstört ist. Der vorschriftsmäßige Betrieb mancher Geräte (z. B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung.

Dem Zentralamt für Zulassungen im Fernmeldewesen wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf die Einhaltung der Bestimmungen eingeräumt.

Roland Corporation

4-16 Dojimahama 1-Chome Kita-ku Osaka 530 Japan

(Name und Anschrift des Herstellers/Importeurs)

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

For Canada

CLASS B **NOTICE**

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B **AVIS**

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

Preface

Thank you for purchasing the Roland AT-4 Acoustic Trigger Interface.

The AT-4 is an interface box which allows control signals from acoustic trigger pickups to directly control devices such as the Roland TD-7 or SPD-11. By using the AT-4 in conjunction with acoustic trigger pickups, you can control a TD-7 or SPD-11 while retaining the musical nuances of the performance.

In order to take full advantage of the AT-4's functions and enjoy years of trouble-free service, please read this manual carefully.

What is an Acoustic Trigger Pickup?

An acoustic trigger pickup is a transducer which outputs a trigger signal indicating the force with which an acoustic drum is struck. Acoustic trigger pickups are commercially available for attachment to drum heads, shells or rims.

What is the AT-4?

In comparison to dedicated electronic drum pads (eg., Roland's PD-7s: sold separately), the output level produced by acoustic trigger pickups is low and the output signal is irregular. If such acoustic trigger pickups are connected directly to a TD-7 or SPD-11, the musical nuances of the acoustic drum will be lost. This is why the AT-4 Acoustic Trigger Interface was developed. The AT-4 adjusts the output signal from the acoustic trigger pickup so that it will be suitable for input into a TD-7 or SPD-11, thereby allowing you to fully utilize the musical expressiveness of an acoustic drum.

Table of contents

Important notes

When using an AC adaptor, use only the specified device (BOSS PSA-series). Use of any other AC adaptor could result in damage, malfunction or electric shock.

(Power Supply)

- Before connecting this unit to other devices, turn off the power to all units; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise; an electric motor or variable lighting system for example.
- The power requirement for this unit is indicated on its nameplate (rear panel). Ensure that the voltage in your installation meets this requirement.
- Avoid damaging the power cord: do not step on it, place heavy objects on it, etc.
- INPUT 1 functions as a power switch. Disconnect the cable from INPUT 1 whenever the unit is to remain unused.
- When disconnecting the AC adaptor from the power outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for an extended period of time, unplug the power cord.
- When installing or replacing a battery, refer to "Changing the battery" (page 7).

(Placement)

- Do not subject the unit to temperature extremes (eg., direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas, or areas that are subject to high levels of vibration.
- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

(Maintenance)

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

(Battery)

- Remove the battery whenever the unit is to remain unused for an extended period of time.
- If there is a battery in the unit while an AC adaptor is being used, normal operation will continue should the line voltage be interrupted (power blackout or power cord disconnection).
- The battery will last for approx. 2 hours(Carbon) or 8.5 hours(Alkaline) . The use of an alkaline battery is recommended for a long time performance.
- When operating solely on a battery, the POWER indicator becomes dim when the battery is depleted. Replace the battery immediately.

(Additional Precautions)

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Should a malfunction occur, or if you suspect there is a problem, discontinue use immediately. Contact qualified service personnel as soon as possible.
- To avoid the risk of electric shock, do not open the unit.

Front and rear panels

Front



POWER indicator

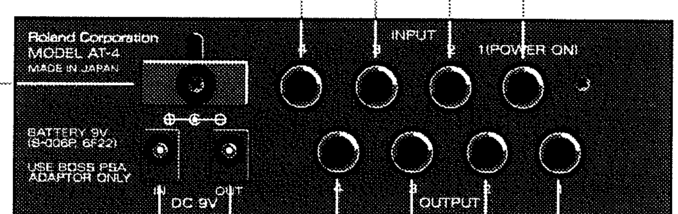
This indicator lights when a plug is inserted into INPUT 1, indicating that the unit is operating.

* **This indicator also functions as a battery check; if the indicator becomes dim or does not light at all, please install a new battery. (See p.7)**

SENSITIVITY knobs (1-4)

These knobs adjust the sensitivity of the connected acoustic trigger pickups.

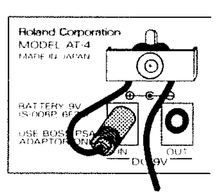
Rear



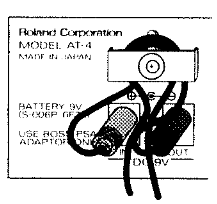
Cable hook

Wrap the AC adaptor cable (or the DC cable) around this hook to prevent the plug from being accidentally disconnected.

* AC adaptor



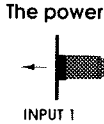
* AC adaptor + DC cable



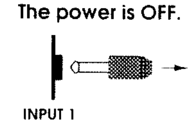
INPUT jacks (1-4)

Connect acoustic trigger pickups to these jacks. INPUT 1 also functions as a power switch. (The power will turn on when a mono plug is inserted, and off when the plug is pulled out.)

The power is ON.



The power is OFF.



OUTPUT jacks (1-4)

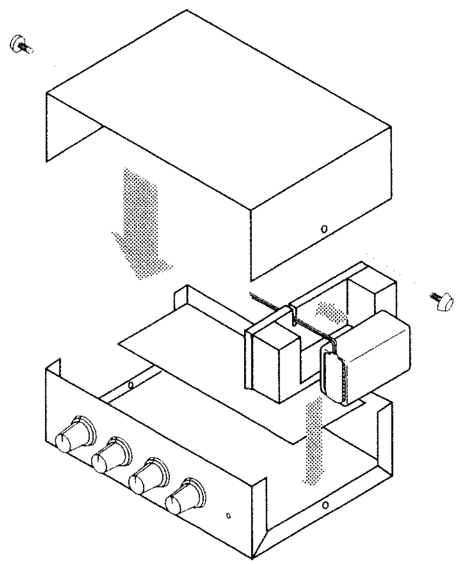
These jacks output the adjusted trigger signals. Connect these jacks to the trigger inputs of the TD-7, or to the EXT inputs of the SPD-11.

AC adaptor jack (IN, OUT)

An AC adaptor (BOSS PSA- series: sold separately) can be connected to DC IN. If you wish to supply power to another AT-4, connect a DC cable (BOSS PCS-25: sold separately) to DC OUT.

Changing the battery

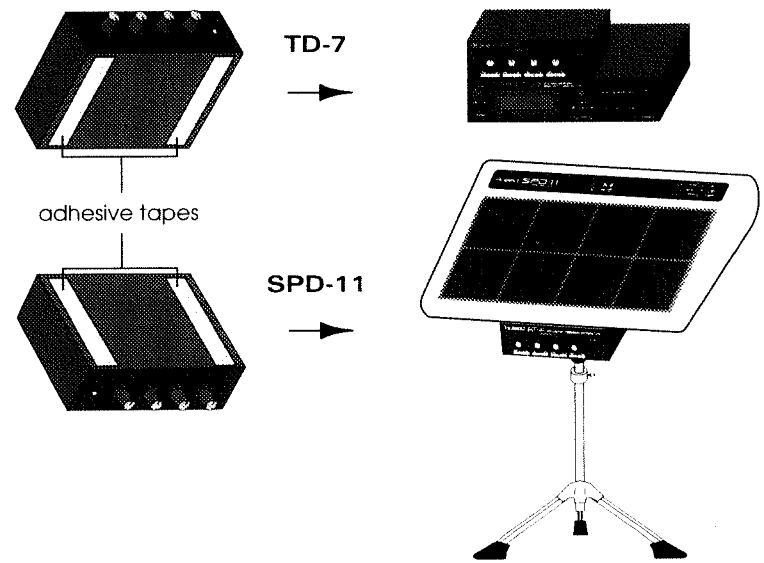
The AT-4 uses one 006P/9V battery.
Remove the two screws from both sides, and insert the battery as shown in the diagram.



*** Make sure that the polarity (+/-) of the battery connector is correct.**

Installing the AT-4

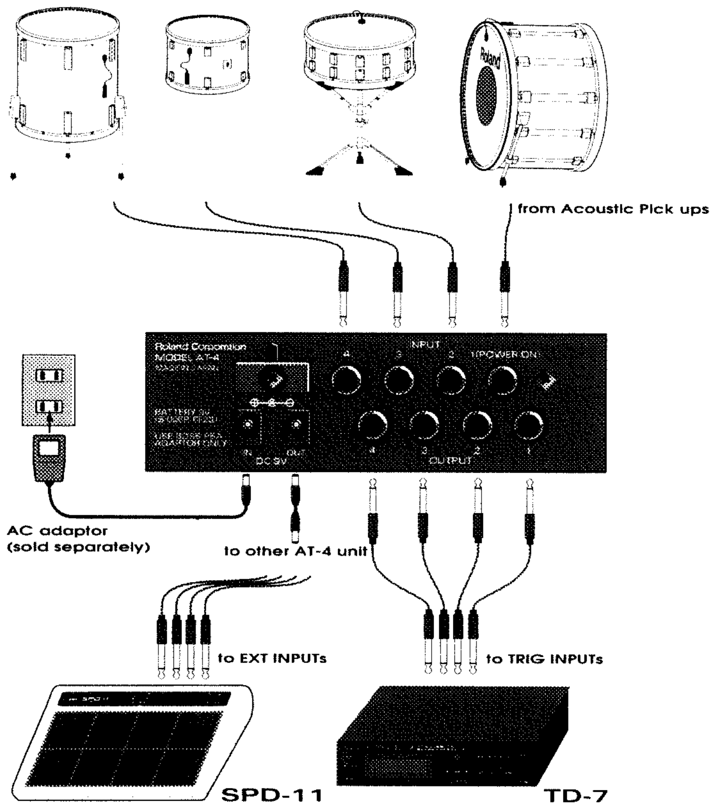
The AT-4 is used in connection with a TD-7 or SPD-11, etc. You can use the zelcro-type tapes included with the AT-4 to attach it to a TD-7 or SPD-11.



*** Be sure the mounting surface is free of dust before you begin.**

1. Connections

Use mono cables to make connections between acoustic trigger pickups and the AT-4.



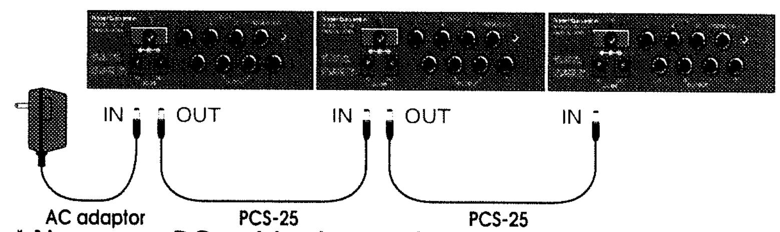
*** INPUT 1 also functions as the power switch, so be sure that it is connected when you wish to use the AT-4. (A stereo cable cannot be used.)**

*** Before inserting or removing a plug from an INPUT jack, be sure to turn down the volume on the amp/sound system.**

*** A trigger signal will be transmitted when the power is turned on, so turn down the volume of the TD-7 or SPD-11 before inserting a plug into INPUT 1.**

*** For details on attaching an acoustic trigger pickup to a drum, refer to the manual of the trigger pickup you are using.**

By using DC cables (BOSS PCS-25:sold separately) you can use one AC adaptor to provide power to up to three AT-4 units.



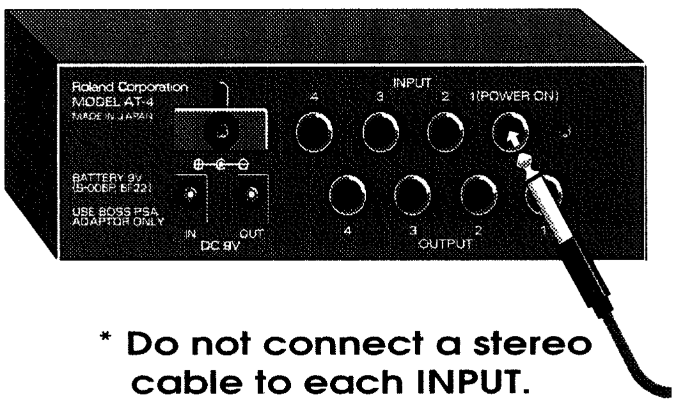
*** Never use DC cables to supply power to other products.**

• Recommended placement for acoustic trigger pickups (adhesive types)

Drum	Location	Description
Snare drum	batter head	2-3 cm from the rim
Bass drum	batter head	5-10 cm from the upper part of the rim
Tomtom	shell	beside a lug, 2-3cm from the rim of the batter side
Floor tom	shell	beside a lug, 2-3cm from the rim of the batter side

2. Turn on the power

After turning down the volume on the TD-7 or SPD-11, connect a mono cable to INPUT 1 (stereo cables cannot be used). The power will come on, and the POWER indicator will light.



*** Do not connect a stereo cable to each INPUT.**

To turn off the power, first turn down the volume of the TD-7 or SPD-11, and then disconnect the cable from INPUT 1.

3. TD-7/SPD-11 settings

For inputs using an acoustic trigger pickup, adjust the trigger parameters to appropriate values using the following settings as a guideline.

TD-7:

Vel Curve	:	Norm 3
Max Dyna	:	8
Min Dyna	:	4
Min Velo	:	1
Mask Time	:	0 ms
Threshold	:	1

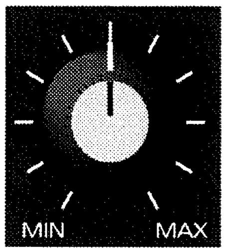
SPD-11:

TRIG SENS	:	6
TRIG THRESHOLD	:	1
TRIG MASK TIME	:	0
TRIG SCAN TIME	:	10

*** You may need to adjust these values depending on the type of acoustic trigger pickups you are using, the location on the drum, and your drum setup.**

4. Adjust the sensitivity

Use the SENSITIVITY knobs to adjust the sensitivity of the acoustic trigger pickups.



* **Sensitivity will increase as each knob is rotated clockwise.**

Adjust the sensitivity so that the dynamics change naturally as you play softly or loudly, and so that there are no differences in level between pickups. Higher sensitivity settings will give you more detailed control over playing dynamics, but will also mean that 'double triggering' can occur more easily. (Double triggering is when two or more notes are sounded from a single drum stroke.)

If you are unable to make appropriate adjustments using the SENSITIVITY knobs, or if dynamics do not sound natural, adjust the settings of the TD-7 or SPD-11.

•Hints for TD-7/SPD-11 settings

The level is low
-> lower Max Dyna (TD-7)
-> raise TRIG Sensitivity (SPD-11)

Soft strokes produce loud notes
-> raise Min Dyna (TD-7)

Single strokes produce multiple notes (double triggering)
-> raise THRESHOLD (TD-7/SPD-11)

Other drums also sound (crosstalk occurs)
-> raise THRESHOLD (TD-7/SPD-11)

Soft strokes are not detected
-> lower THRESHOLD (TD-7/SPD-11)

Changes in playing dynamics do not affect volume
-> lengthen TRIG SCAN TIME (SPD-11)

• Hints for drum setups

Most problems with double triggering or crosstalk can be eliminated by changing the location of the pickups, adjusting the tuning of the drums or by modifying the drum setup.

If you have problems with double triggering, try changing the location of the pickups. If this does not work, we suggest you mute the drums (i.e., shorten the resonance by damping the drum head with felt, etc.). When the drums are muted, dynamics will also be triggered more accurately. For a snare drum, it is also effective to set the snare wires fairly tight.

If you have problems with crosstalk, change the setting of the drums to separate those which produce crosstalk, or attach them to separate stands (where possible).

Main specifications

AT-4: Acoustic Trigger Interface

• Controls
SENSITIVITY Knobs (1-4)

• Indicator
POWER Indicator (also serves as a battery check)

• Jacks
INPUT Jacks (1-4)
OUTPUT Jacks (1-4)
AC Adaptor Jacks (IN, OUT) (DC 9V)

• Power Supply
Dry Battery (9V)
AC Adaptor : BOSS PSA series

• Current Draw
40 mA

*** Expected battery life (These figures will vary depending on the actual conditions of use.):**
Carbon : approx. 2 hours
Alkaline : approx. 8.5 hours

• Dimensions
154(W) ~ 118(D) ~ 44(H) mm
6-1/16(W) ~ 4-11/16(D) ~ 1-3/4(H) inches

• Weight
460g / 1lb (including battery)

• Accessories
Dry Battery (9V) : BOSS S-006PD/9V (6F22/9V)
Owner's Manual
Zelcro-type Tape (set of 2)

• Options
Dry Battery (9V) : BOSS S-006PD/9V (6F22/9V)
AC Adaptor : BOSS PSA series
DC Cable : BOSS PCS-25

*** The specifications for this product are subject to change without prior notice.**

Information

When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

U. S. A.
Roland Corporation US
7200 Dominion Circle
Los Angeles, CA. 90040-3696, U. S. A.
TEL: (213) 685-5141

CANADA
Roland Canada Music Ltd.
(Head Office)
5480 Parkwood Way
Richmond B. C., V6V 2M4
CANADA
TEL: (604) 270-6626

Roland Canada Music Ltd.
(Montreal Office)
9425 Transcanadienne
Service Rd. N., St Laurent, Quebec H4S 1V3, CANADA
TEL: (514) 335-2009

Roland Canada Music Ltd.
(Toronto Office)
346 Watline Avenue,
Mississauga, Ontario L4Z 1X2, CANADA
TEL: (416) 890-6488

AUSTRALIA
Roland Corporation Australia Pty. Ltd.
38 Campbell Avenue
Dee Why West. NSW 2099
AUSTRALIA
TEL: (02) 982-8266

NEW ZEALAND
Roland Corporation (NZ) Ltd.
97 Mt. Eden Road, Mt. Eden, Auckland 3, NEW ZEALAND
TEL: (09) 3098-715

UNITED KINGDOM
Roland (U.K.) Ltd.
Rye Close Ancells Business Park Fleet, Hampshire GU13 8UY, UNITED KINGDOM
TEL: 0252-816181

Roland (U.K.) Ltd., Swansea Office
Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA79FJ, UNITED KINGDOM
TEL: (0792) 700-139

ITALY
Roland Italy S. p. A.
Viale delle Industrie 8 20020
ARESE MILANO ITALY
TEL: 02-93581311

SPAIN
Roland Electronics de España, S. A.
Calle Bolivia 239 08020
Barcelona, SPAIN
TEL: 93-308-1000

GERMANY
Roland Elektronische Musikinstrumente Handelsgesellschaft mbH.
Oststrasse 96, 2000
Norderstedt, GERMANY
TEL: 040/52 60 090

FRANCE
Musikengro
102 Avenue Jean-Jaures
69007 Lyon Cedex 07
FRANCE
TEL: (7) 858-54 60

Musikengro (Paris Office)
Centre Region Parisienne 41 rue Charles-Fourier, 94400 Vitry SUR/SEINE FRANCE
TEL: (1) 4680 86 62

BELGIUM/HOLLAND/ LUXEMBOURG
Roland Benelux N. V.
Houtstraat 1 B-2260 Oevel-Westerlo BELGIUM
TEL: (0032) 14-575811

DENMARK
Roland Scandinavia A/S
Langebrogade 6 Box 1937
DK-1023 Copenhagen K.
DENMARK
TEL: 31-95 31 11

SWEDEN
Roland Scandinavia A/S
Danvik Center 28 A, 2 tr.
S-131 30 Nacka SWEDEN
TEL: 08-702 00 20

NORWAY
Roland Scandinavia Avd. Kontor Norge
Lilleakerveien 2 Postboks 95
Lilleaker N-0216 Oslo 2
NORWAY
TEL: 22-73 00 74

FINLAND
Fazer Musik Inc.
Länsituulentie POB 169,
SF-02101 Espoo FINLAND
TEL: 0-43 50 11

SWITZERLAND
Musitronic AG
Gerberstrasse 5, CH-4410
Liestal, SWITZERLAND
TEL: 061/921 16 15

Roland CK (Switzerland) AG
P.O.Box Landstrasse 5
CH-4452 Itingen (BL)
SWITZERLAND
TEL: (61) 971 80 80
Repair Service by Musitronic AG

AUSTRIA
E. Dematte &Co.
Neu-Rum Siemens-Strasse 4
6021 Innsbruck P.O.Box 83
AUSTRIA
TEL: (0512) 26 44 260

GREECE
V. Dimitriadis & Co. Ltd.
20, Alexandras Avn., GR
10682 Athens, GREECE
TEL: 01-8232415

PORTUGAL
Casa Caius Instrumentos Musicais Lda.
Rua de Santa Catarina 131
4000 Porto, PORTUGAL
TEL: 02-38 44 56

HUNGARY
Intermusica Ltd.
Warehouse Area 'DEPO'
Torokbalint, Budapest
HUNGARY
TEL: (1) 1868905

ISRAEL
D.J.A. International Ltd.
11 Bar Gyiora St., Tel Aviv
ISRAEL
TEL: 972-3-5283329

CYPRUS
Radex Sound Equipment Ltd.
17 Diagorou St., P.O.Box
2046, Nicosia CYPRUS
TEL: 453426, 466423

U.A.E
Zak Electronics & Musical Instruments Co.
P.O. Box 8050
DUBAI, U.A.E
TEL: 695774

SAUDI ARABIA
Omar Badoghaish Trading Corp.
P.O. Box 5980
Jeddah, SAUDI ARABIA
TEL: 966-02-6607038

KUWAIT
Easa Husain Al-Yousifi
P.O. Box 126 Safat 13002
KUWAIT
TEL: 965-5719499

LEBANON
A. Chahine & Fils
P.O. Box 16-5857
Beirut, LEBANON
TEL: 335799

TURKEY
Barkat Sanayi ve Ticaret
Siraselviler Cad. 86/6 Taksim
Istanbul, TURKEY
TEL: 149 93 24

EGYPT
Al Fanny Trading Office
9, Ebn Hagar Ai Askalany
Street, Ard El Golf,
Heliopolis, Cairo, 11341
EGYPT
TEL: 2917803-665918

QATAR
Badie Studio & Stores
P.O.Box 62,
DOHA Qatar
TEL: 974 423554

BAHRAIN
Moon Stores
Bad Al Bahrain Road,
P.O.Box 20077
State of Bahrain
TEL: (0973) 211 005

BRAZIL
Roland Brasil Ltda.
R. Alvarenga 591 CEP-05509
Sao Paulo BRAZIL
TEL: (011) 210-7266
Repair Service for Roland and Rhodes products

Oliver do Brasil S.A. Instrumentos Musicais
Rua Boturoca. 198/206
CEP 05586-010 Vila Indiana
Butanta Sao Paulo-SP BRAZIL
TEL: (011) 814-1344
Repair Service for BOSS products

MEXICO
Casa Veerkamp, s.a. de c.v.
Mesones No. 21 Col. Centro
MEXICO D.F. 06080
TEL: (5) 709-3716

La Casa Wagner de Guadalajara s.a. de c.v.
Av. Corona No. 202 S.J.
C.P.44100 Guadalajara,
Jalisco MEXICO
TEL: (36) 13-1414

VENEZUELA
Musicland Digital C.A.
Av. Francisco De Miranda,
Centro Parque Cristal, Nivel
C2 Local 20 Caracas
VENEZUELA
TEL: (2)2844497

PANAMA
Productos Superiores, S.A.
Apartado 655 - Panama 1
REP. DE PANAMA
TEL: 26-3322

ARGENTINA
Instrumentos Musicales S.A.
Florida 638
(1005) Buenos Aires
ARGENTINA
TEL: (1)394-4029

HONG KONG
Tom Lee Music Co., Ltd. Service Division
22-32 Pun Shan Street, Tsuen Wan, New Territories,
HONG KONG
TEL: 415-0911

KOREA
Cosmos Corporation Service Station
261 2nd Floor Nak-Won
Arcade Jong-Ro ku, Seoul,
KOREA
TEL: (02) 742 8844

SINGAPORE
Swee Lee Company
BLOCK 231,
Bain Street #03-23
Bras Basah Complex,
Singapore 0718
TEL: 3367886

PHILIPPINES
G.A. Yupangco & Co. Inc.
339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
TEL: 02 (817) 0013

THAILAND
Theera Music Co., Ltd.
330 Verng Nakorn Kasem,
Soi 2, Bangkok 10100,
THAILAND
TEL: 2248821

VIETNAM
Saigon Music Distributor
383A Dien Bien Phu St.
3rd. District
Ho Chi Mink City, Vietnam
TEL: 84-8-391395/332674

MALAYSIA
Syarikat Bentley
No.142, Jalan Bukit Bintang
55100 Kuala Lumpur,
MALAYSIA
TEL: (03) 2443333

INDONESIA
PT Citrarama Belantika
JL Alaydrus 84 B
Jakarta 10130
INDONESIA
TEL: (021) 3802638, 3802639

TAIWAN
Siruba Enterprise (Taiwan) Co., LTD.
Room. 5, 9fl. No. 112 Chung Shan N.Road Sec.2 Taipei,
TAIWAN, R.O.C.
TEL: (02) 571-5860

SOUTH AFRICA
That Other Music Shop (PTY) Ltd.
11 Melle Street (Cnr Melle and Juta Street)
Braamfontein 2001
Republic of South Africa
TEL: 27 11 403-4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre
Claremont 7700
Republic of South Africa
TEL: 021-64-4030

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